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NEWS 6 Apr 23 PRE-1967 REFERENCES NOW SEARCHABLE IN CAPLUS AND CA
NEWS 7 May 07 DGENE Reload
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=> s chimeric oligonucleotide?
L1 585 CHIMERIC OLIGONUCLEOTIDE?

=> s l1 and 5' and thymidine
MISMATCHED QUOTE 'AND 5' AND'
Quotation marks (or apostrophes) must be used in pairs,
one before and one after the expression you are setting
off or masking.

=> s l1 and thymidine
L2 11 L1 AND THYMIDINE

=> dup rem l2
DUPLICATE IS NOT AVAILABLE IN 'REGISTRY'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L2
L3 9 DUP REM L2 (2 DUPLICATES REMOVED)

=> d l3 ibib abs 1-
YOU HAVE REQUESTED DATA FROM 9 ANSWERS - CONTINUE? Y/(N):y

L3 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 2001:167846 CAPLUS
DOCUMENT NUMBER: 134:217995
TITLE: Single-stranded oligodeoxynucleotide mutational
vectors for introduction of predetd. genetic changes
in target genes of a living cell
INVENTOR(S): Metz, Richard A.; Frank, Bruce L.; Walther, Debra M.
PATENT ASSIGNEE(S): Valigen (US), Inc., USA
SOURCE: PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001015740	A1	20010308	WO 2000-US23457	20000825
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			

PRIORITY APPLN. INFO.:

US 1999-384960 A 19990827

AB The present invention is based on the unexpected discovery that single-stranded oligodeoxynucleotides, particularly when appropriately modified or placed in a compn. with a suitable macromol. carrier, can be as or more effective in making predetd. genetic changes to target genes

in

cells as the prior art, i.e., Kmiec type mutational vectors. A single stranded oligodeoxynucleotide suitable for use according to the present invention is termed hereafter a Single-Stranded Oligodeoxynucleotide Mutational Vector or a SSOMV. The oligodeoxynucleotides are effective in animal, plant and bacterial cells. Specific end modifications that greatly increase the effectiveness of the oligodeoxynucleotides in bacteria are described. In preferred embodiments the

oligodeoxynucleotide

is modified by the attachment of 3' and 5' blocking substituents such as

a

3'-3' linked cytosine nucleotide and a 5' linked indocarbocyanine dye.

In

an alternative embodiment the modification can consist of the replacement of the 3' most and/or 5' most internucleotide phosphodiester linkage with anon-hydrolyzeable linkage such as a phosphorothioatediester linkage or a phosphoramidate linkage. Surprisingly, unmodified oligodeoxynucleotides can be as effective in mammalian cells, including in vivo hepatocytes, as the modified nucleotides and can be as effective or more effective than **chimeric oligonucleotides** that consist of a mixt. of deoxynucleotides and 2'-O-Me ribonucleotides.

REFERENCE COUNT:

9

REFERENCE(S):

- (1) Boussif; Proceedings of the National Academy of Sciences 1995, V92, P7297 CAPLUS
 - (2) Brush; US 5808044 A 1998 CAPLUS
 - (3) Campbell; The New Biologist 1989, V1(2), P223 CAPLUS
 - (4) Hunger-Bertling; Molecular and Cellular Biochemistry 1990, V92, P107 CAPLUS
 - (5) Kunzelmann; Gene Therapy 1996, V3, P859 CAPLUS
- ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2001 ACS

DUPLICATE 1

ACCESSION NUMBER: 1999:240162 CAPLUS

DOCUMENT NUMBER: 130:338340

TITLE: 2'-deoxyribo-PNAs: a structurally novel class of polyamide nucleic acids with good RNA and DNA binding affinity

AUTHOR(S): Von Matt, Peter; De Mesmaeker, Alain; Pieves, Uwe; Zurcher, Werner; Altmann, Karl-Heinz

CORPORATE SOURCE: Novartis Pharmaceuticals Inc., Summit, NJ, 07901, USA

SOURCE: Tetrahedron Lett. (1999), 40(15), 2899-2902

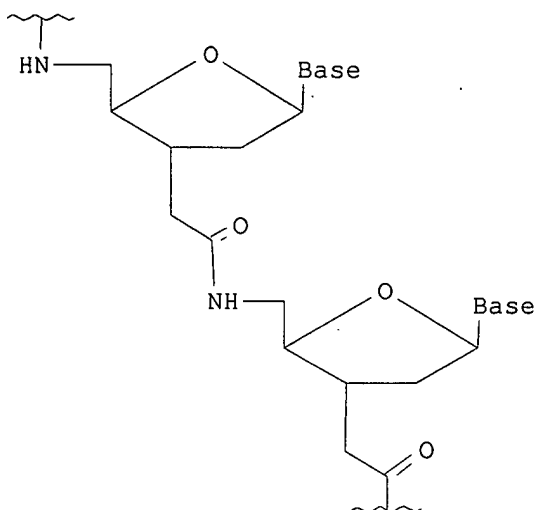
CODEN: TELEAY; ISSN: 0040-4039

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



I

AB 2'-Deoxy-ribo polyamide nucleic acids (2'-deoxy-ribo-PNAs) (I) are a new class of DNA analogs with a 2',3'-dideoxy-ribose-polyamide backbone structure. 2'-Deoxy-ribo-PNAs as well as **chimeric oligonucleotide** analogs with a mixed DNA / 2'-deoxy-ribo-PNA structure bind to single stranded complementary nucleic acids with similar

affinities as natural DNA.

REFERENCE COUNT: 31

REFERENCE(S): (1) Altmann, K; Chimia 1996, V50, P168 CAPLUS
 (3) Atherton, E; J Chem Soc, Chem Commun 1985, P165 CAPLUS
 (4) Bannwarth, W; Helv Chim Acta 1988, V71, P1517 CAPLUS
 (5) Crooke, S; Med Res Rev 1996, V16, P319 CAPLUS
 (6) De Mesmaeker, A; Acc Chem Res 1995, V28, P366 CAPLUS

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1998:184007 CAPLUS

DOCUMENT NUMBER: 128:240335

TITLE: Mammalian and human gene REC2 recombinases to induce transformation by homologous recombination and their promoters for sensitization of cells to irradiation
 INVENTOR(S): Holloman, William K.; Rice, Michael C.; Smith, Sheryl T.; Shu, Zhigang; Kmiec, Eric B.

PATENT ASSIGNEE(S): Thomas Jefferson University, USA; Cornell Research Foundation, Inc.

SOURCE: PCT Int. Appl., 88 pp.
 CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 9811214 A1 19980319 WO 1997-IB1217 19970911
W: AL, AM, AU, AZ, BA, BB, BG, BR, BY, CA, CN, CU, CZ, EE, GE, GH,
HU, IL, IS, JP, KG, KP, KR, KZ, LC, LK, LR, LT, LV, MD, MG, MK,
MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, SL, TJ, TM, TR, TT, UA,
UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR,
GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA,
GN, ML, MR, NE, SN, TD, TG
AU 9743159 A1 19980402 AU 1997-43159 19970911
EP 961827 A1 19991208 EP 1997-941157 19970911
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, FI
JP 2001500729 T2 20010123 JP 1998-513444 19970911
PRIORITY APPLN. INFO.: US 1996-25929 P 19960911
WO 1997-IB1217 W 19970911
AB The invention concerns mammalian recombinase genes (REC2) and their
promoters. Overexpression of gene REC2 recombinase in a cell is found to
facilitate homologous recombination, particularly homologous
recombination
using a DNA/RNA **chimeric oligonucleotide** and to
sensitize a cell to the apoptotic effects of irradiation. The REC2 promoter,
in combination with a strong enhancer, e.g., a SV40 enhancer, was found
to
be a strong promoter following irradiation of the cells. A radiation
inducible promoter can be used to sensitize a cell to radiation
treatment
by operably linking the radiation-inducible promoter to a gene whose
expression converts a prodrug to a drug such as a herpes **thymidine**
kinase gene.
L3 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1998:667123 CAPLUS
DOCUMENT NUMBER: 130:14156
TITLE: Nucleoside 3'-O-(2-oxo-"spiro"-4.4-pentamethylene-
1.3.2-oxathiaphospholane)s: monomers for
stereocontrolled synthesis of oligo(nucleoside
phosphorothioate/phosphate)s
AUTHOR(S): Karwowski, Boleslaw; Guga, Piotr; Kobylanska, Anna;
Stec, Wojciech J.
CORPORATE SOURCE: Centre of Molecular and Macromolecular Studies,
Department of Bioorganic Chemistry, Polish Academy of
Sciences, Lodz, 90-363, Pol.
SOURCE: Nucleosides Nucleotides (1998), 17(9-11), 1747-1759
CODEN: NUNUD5; ISSN: 0732-8311
PUBLISHER: Marcel Dekker, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Attempts at synthesis of **"chimeric" oligonucleotide**
constructs (PO/PS-Oligos) possessing phosphate and P-stereo-defined
phosphorothioate inter-nucleotide linkages via combined
phosphoramidite/oxathiaphospholane methods were unsuccessful. Therefore,
novel monomers for oxathiaphospholane method, namely 5'-O-DMT-
deoxyribonucleoside 3'-O-(2-oxo-spiro-4.4-pentamethylene-1.3.2-
oxathiaphospholane)s, were prepd. and used together with their
diastereomerically pure 2-thio analogs for the stereocontrolled synthesis
of **"chimeric" oligonucleotide** constructs
(PO/PS-Oligos).
REFERENCE COUNT: 37
REFERENCE(S): (1) Alul, R; Nucleic Acids Res 1991, V19, P1527
CAPLUS

- (3) Arnone, A; J Org Chem 1997, V62, P6401 CAPLUS
- (4) Bryant, F; Biochemistry 1979, V18(13), P2825
CAPLUS
- (5) Davis, F; Asymmetric Synthesis 1984, V4, P313
CAPLUS
- (6) Drutsa, V; Dokl Akad Nauk SSSR 1977, V233, P595
CAPLUS

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 5 OF 9 EMBASE COPYRIGHT 2001 ELSEVIER SCI. B.V.DUPLICATE 2
 ACCESSION NUMBER: 97357004 EMBASE
 DOCUMENT NUMBER: 1997357004

TITLE: Synthesis and hybridization properties of modified
 oligonucleotides with PNA-DNA dimer blocks.

AUTHOR: Wenninger D.; Seliger H.

CORPORATE SOURCE: D. Wenninger, University of Ulm, Section of Polymers,
 Albert-Einstein-Allee 11, 89069 Ulm, Germany

SOURCE: Nucleosides and Nucleotides, (1997) 16/7-9 (977-980).
 Refs: 5

ISSN: 0732-8311 CODEN: NUNUD5

COUNTRY: United States

DOCUMENT TYPE: Journal; Conference Article

FILE SEGMENT: 029 Clinical Biochemistry

LANGUAGE: English

SUMMARY LANGUAGE: English

AB Different modified PNA-DNA dimer-analogous synthons (I and II) were
 synthesized as phosphoramidites. These dimer units were assembled by a
 5'-

modified deoxythymidine and a modified PNA monomer. These synthons were
 used in the routine coupling procedure for oligonucleotides. Therefore no
 PNA coupling chemistry is necessary to synthesize PNA-DNA **chimeric
 oligonucleotides**. Various deoxyoligonucleotides were synthesized
 introducing the dimer blocks I and II at different positions in the
 sequences. Melting temperatures of the modified oligonucleotides with
 their complementary DNA analogues were determined.

L3 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1995:969424 CAPLUS

DOCUMENT NUMBER: 124:146761

TITLE: Backbone-modified oligonucleotide analogs and solid
 phase synthesis

INVENTOR(S): Cock, Phillip Dan; Sanghvi, Yogesh S.; Morvan,
 Francois

PATENT ASSIGNEE(S): Isis Pharmaceuticals, Inc., USA

SOURCE: PCT Int. Appl., 92 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 72

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9518136	A1	19950706	WO 1994-US14883	19941228
W: CA, JP, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5541307	A	19960730	US 1993-174379	19931228
EP 737201	A1	19961016	EP 1995-906115	19941228
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT,				

SE

US 6232463	B1	20010515	US 1998-128508	19980804
US 6146829	A	20001114	US 1998-144611	19980831
PRIORITY APPLN. INFO.:			US 1993-174379	A 19931228
			US 1990-558663	A2 19900727
			US 1990-566836	A2 19900813
			US 1991-703619	A2 19910521
			US 1992-903160	B2 19920624
			US 1993-40903	A2 19930331
			WO 1994-US14883	W 19941228
			US 1997-861306	A3 19970421
			US 1997-948151	A1 19971009

AB Comps. and methods for prepg. nuclease-resistant oligonucleotide analogs are provided. In preferred embodiments, the methods involve solid-phase coupling of synthons bearing either 3'-electrophilic groups and 5'-nucleophilic groups or 5'-electrophilic groups and 3'-nucleophilic groups to form neutral, achiral oligomers. In particular, amine-terminated synthons are coupled with aldehyde-terminated synthons to

produce hydroxylamino- and/or hydrazino-contg. covalent linkages. Examples illustrate prepn. of a variety of nucleotide analogs, various nucleotide dimer and tetramer analogs contg. the novel linkages, and oligonucleotide analogs contg. both the novel and std. linkages. For instance, coupling of 5'-O-amino-N4-benzoyl-3'-O-tert-butyldiphenylsilyl-5-methyl-2'-deoxycytidine with 5'-O-tert-butyldiphenylsilyl-3'-deoxy-3'-C-formylthymidine to give an oxime, followed by deprotection of the benzamide function with NH3/MeOH, redn. of the oxime function with NaBH3CN, and reductive N-methylation with formaldehyde and NaBH3CN, gave the dimer TBDPS-O-T*MeC-O-TBDPS [TBDPS = tert-butyldiphenylsilyl; * = 3'-CH2NMeO-5' (hereafter "MMI") linkage; Me = 5-methyl] in 84% yield. This dimer was subjected to N-benzoylation, desilylation, tritylation, and

phosphitylation, to give the dimer DMT-O-T*MeCBz-O-Amidite [DMT = 4,4'-dimethoxytrityl; Amidite = P(NPr-iso2)OCH2CH2CN; Bz = N4-benzoyl]. This and similar MMI-linkage dimers and tetramers were used to prep. **chimeric oligonucleotides** such as T*TPSC*TPSCPSGPSCSTPSGSPGPSTPSGPSAPSGPST*TPST*C (code no. 9495; I; PS = phosphorothioate linkage). As an antisense oligonucleotide for PKC-.alpha. mRNA in A549 cells, I showed greater activity (IC50 = 80 nM) than the analogous std. oligonucleotide sequence with pure phosphorothioate linkages (IC50 = 175 nM).

L3 ANSWER 7 OF 9 EMBASE COPYRIGHT 2001 ELSEVIER SCI. B.V.
 ACCESSION NUMBER: 96018268 EMBASE
 DOCUMENT NUMBER: 1996018268
 TITLE: Oligonucleotides containing acyclic nucleoside analogues with carbamate internucleoside linkages.
 AUTHOR: Habus I.; Agrawal S.
 CORPORATE SOURCE: Hybridon Inc., One Innovation Drive, Worcester, MA 01605, United States
 SOURCE: Nucleosides and Nucleotides, (1995) 14/9-10 (1853-1859). ISSN: 0732-8311 CODEN: NUNUD5
 COUNTRY: United States
 DOCUMENT TYPE: Journal; Article
 FILE SEGMENT: 006 Internal Medicine
 037 Drug Literature Index
 LANGUAGE: English
 SUMMARY LANGUAGE: English

AB Synthesis of 2'-deoxy-2',3'-secothymidine t and its dimer t*t, where the two 2'-deoxy-2',3'-secothymidine t units are connected via a carbamate,

*=3'-NH-CO-O-5', internucleoside linkage has been achieved. These building blocks were protected in the 5'-position, converted into their phosphoramidites, or attached onto CPG, and then used for 'chimeric oligonucleotide' synthesis.

L3 ANSWER 8 OF 9 EMBASE COPYRIGHT 2001 ELSEVIER SCI. B.V.
ACCESSION NUMBER: 95228197 EMBASE
DOCUMENT NUMBER: 1995228197
TITLE: The prooligonucleotide approach: II. Synthesis and stability studies of **chimeric oligonucleotide** models.
AUTHOR: Barber I.; Tosquellas G.; Morvan F.; Rayner B.; Imbach J.-L.
CORPORATE SOURCE: Laboratoire de Chimie Bio-Organique, URA 488 du CNRS, Universite de Montpellier II, Place Eugene-Bataillon, 34095 Montpellier Cedex 5, France
SOURCE: Bioorganic and Medicinal Chemistry Letters, (1995) 5/14 (1441-1444).
ISSN: 0960-894X CODEN: BMCLE8
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 029 Clinical Biochemistry
030 Pharmacology
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English

AB Alkylation of a central gap of three phosphorothioate linkages into a dodecathymidine methylphosphonate with different iodoalkyl acylates yielded the corresponding neutral oligonucleotides. Upon incubation of these prooligonucleotides in cell extracts, the bioreversible alkyl acylate masking groups were selectively removed by carboxyesterases present in the milieu.

L3 ANSWER 9 OF 9 SCISEARCH COPYRIGHT 2001 ISI (R)
ACCESSION NUMBER: 95:275925 SCISEARCH
THE GENUINE ARTICLE: QT138
TITLE: SITE-DIRECTED CLEAVAGE OF SINGLE INTERNUCLEOTIDE BONDS IN RIBOSOMAL-RNA
AUTHOR: BOGDANOVA S L; DEGTYAREV A I; BARANOV P V; DOKUDOVSKAYA S S; LAVRIK I N; DONTSOVA O A (Reprint); ORETSKAYA T S; KRYNETSKAYA N F; SHABAROVA Z A; BOGDANOV A A
CORPORATE SOURCE: MOSCOW MV LOMONOSOV STATE UNIV, SCH CHEM, MOSCOW 119899, RUSSIA (Reprint); MOSCOW MV LOMONOSOV STATE UNIV, SCH CHEM, MOSCOW 119899, RUSSIA
COUNTRY OF AUTHOR: RUSSIA
SOURCE: BIOCHEMISTRY-MOSCOW, (FEB 1995) Vol. 60, No. 2, pp. 217-224.
ISSN: 0006-2979.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: 18

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The cleavage of 16S ribosomal RNA (rRNA) from E. coli with 'hammerhead' ribozymes and with RNase H in the presence of 'chimeric' (2'-deoxy-F-thymidine containing) oligonucleotides has been studied. The conditions for the cleavage of a desired single internucleotide bond in these large molecules with very complicated secondary and tertiary structures have been found.

=> d history

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FILE 'MEDLINE, EMBASE, CAPLUS, SCISEARCH, BIOSIS, REGISTRY' ENTERED AT 14:54:32 ON 19 JUL 2001

L1 585 S CHIMERIC OLIGONUCLEOTIDE?
L2 11 S L1 AND THYMIDINE
L3 9 DUP REM L2 (2 DUPLICATES REMOVED)

=> s l1 and blocking and group

L4 2 L1 AND BLOCKING AND GROUP

=> dup rem l4

DUPLICATE IS NOT AVAILABLE IN 'REGISTRY'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L4

L5 2 DUP REM L4 (0 DUPLICATES REMOVED)

=> s l1 and nuclease and protection

L6 10 L1 AND NUCLEASE AND PROTECTION

=> s l1 and nuclease and protect?

L7 14 L1 AND NUCLEASE AND PROTECT?

=> dup rem l7

DUPLICATE IS NOT AVAILABLE IN 'REGISTRY'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L7

L8 3 DUP REM L7 (11 DUPLICATES REMOVED)

=> d l8 ibib abs 1-

YOU HAVE REQUESTED DATA FROM 3 ANSWERS - CONTINUE? Y/(N):y

L8 ANSWER 1 OF 3 MEDLINE DUPLICATE 1
ACCESSION NUMBER: 97448861 MEDLINE
DOCUMENT NUMBER: 97448861 PubMed ID: 9303186
TITLE: Studies on the mechanism of stabilization of partially phosphorothioated oligonucleotides against nucleolytic degradation.
AUTHOR: Uhlmann E; Ryte A; Peyman A
CORPORATE SOURCE: Lombardi Cancer Center, Georgetown University Medical Center, Washington, DC 20007-2197, USA.
SOURCE: ANTISENSE AND NUCLEIC ACID DRUG DEVELOPMENT, (1997 Aug) 7 (4) 345-50.
Journal code: CJY; 9606142. ISSN: 1087-2906.
PUB. COUNTRY: United States
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199802
ENTRY DATE: Entered STN: 19980217
Last Updated on STN: 19980217
Entered Medline: 19980205
AB The use of **chimeric oligonucleotides** (ODN), in which certain phosphodiester internucleoside linkages are replaced by phosphorothioate (PS) linkages to provide **protection** against degradation by **nucleases**, is gaining increasing attention

because of their significantly decreased propensity for nonantisense effects as compared with uniformly PS-modified ODN. We have recently reported that partially PS-modified ODN, in which end- capping is used to prevent hydrolysis by exonucleases in combination with PS **protection** at internal pyrimidine residues which are the major sites of endonuclease degradation, are surprisingly stable in serum. The present study investigates an additional role of the backbone modification in the stabilization of ODN against nucleolytic degradation. We show that the stability of an unmodified ODN in fetal bovine serum is significantly enhanced in the presence of PS-modified ODN. The magnitude of stabilization is strongly dependent on the type and degree of backbone modification. The observed effect is stronger for PS-modified ODN than for methylphosphonate (MP)-modified ODN and increases as the number of PS linkages in the ODN increases. Thus, **nuclease** stability of partially PS-modified ODN is not only caused by direct prevention of **nuclease** attack at the phosphate center but is additionally supported by interference of the **nucleases** with the PS groups of ODN, resulting in decreased degradation. As the degree of many nonantisense effects caused by ODN, such as protein interactions and B cell stimulation, is dependent on the backbone modification, our results may have implications for the use of non-ODN **nuclease** inhibitors to reduce undesirable side effects.

L8 ANSWER 2 OF 3 MEDLINE DUPLICATE 2
 ACCESSION NUMBER: 96226169 . MEDLINE
 DOCUMENT NUMBER: 96226169 PubMed ID: 8657564
 TITLE: Oligodeoxynucleoside phosphoramidates (P-NH₂): synthesis and thermal stability of duplexes with DNA and RNA targets.
 AUTHOR: Peyrottes S; Vasseur J J; Imbach J L; Rayner B
 CORPORATE SOURCE: Laboratoire de Chimie Bio-Organique, Universite Montpellier II, Montpellier, France.
 SOURCE: NUCLEIC ACIDS RESEARCH, (1996 May 15) 24 (10) 1841-8. Journal code: O8L; 0411011. ISSN: 0305-1048.
 PUB. COUNTRY: ENGLAND: United Kingdom
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 199607
 ENTRY DATE: Entered STN: 19960808
 Last Updated on STN: 19960808
 Entered Medline: 19960731
 AB Syntheses of non ionic oligodeoxynucleoside phosphoramidates (P-NH₂) and mixed phosphoramidate- phosphodiester oligomers were accomplished on automated solid supported DNA synthesizer using both H-phosphonate and phosphoramidite chemistries, in combination with t-butylphenoxyacetyl for N-**protection** of nucleoside bases, an oxalyl anchored solid support and a final treatment with methanolic ammonia. Thermal stabilities of the hybrids formed between these new analogues and their DNA and RNA complementary strands were determined and compared with those of the corresponding unmodified oligonucleotides, as well as of the phosphorothioate and methylphosphonate derivatives. Dodecathymidines containing P-NH₂ links form less stable duplexes with DNA targets, d(C₂A₁₂C₂) (deltaT_m/modification -1.4 degrees C) and poly dA (deltaT_m/modification -1.1 degrees C) than the corresponding phosphodiester and methylphosphonate analogues, but the hybrids are

slightly more stable than the one obtained with phosphorothioate derivative. The destabilization is more pronounced with poly rA as the target (ΔT_m /modification -3 degrees C) and could be compared with that found with the dodecathymidine methylphosphonate. The modification is less destabilizing in an heteropolymer-RNA duplex (ΔT_m /modification -2 degrees C). As expected, the P-NH₂ modifications are highly resistant towards the action of various **nucleases**. It is also demonstrated that an all P-NH₂ oligothymidine does not elicit Escherichia coli RNase H hydrolysis of the poly rA target but that the modification may be exploited in **chimeric oligonucleotides** combining P-NH₂ sections with a central phosphodiester section.

L8 ANSWER 3 OF 3 EMBASE COPYRIGHT 2001 ELSEVIER SCI. B.V.DUPLICATE 3
ACCESSION NUMBER: 94121230 EMBASE
DOCUMENT NUMBER: 1994121230
TITLE: Synthesis of di-, tri-, and tetrameric building blocks with novel carbamate internucleoside linkages and their incorporation into oligonucleotides.
AUTHOR: Habus I.; Tamsamani J.; Agrawal S.
CORPORATE SOURCE: Hybridon, Inc., One Innovation Drive, Worcester, MA 01605, United States
SOURCE: Bioorganic and Medicinal Chemistry Letters, (1994) 4/8 (1065-1070).
ISSN: 0960-894X CODEN: BMCLE8
COUNTRY: United Kingdom
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FILE SEGMENT: 029 Clinical Biochemistry
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English

AB Synthesis of di-, T*T, tri-, T*T*T, and tetrameric, T*T*T*T, building blocks with carbamate internucleoside linkage, * = 3'-NH-CO-O-5', was achieved by the reaction of mono-, di-, or trimeric nucleoside 5'-O-p-nitrophenyl carbonate intermediates with 30-amino-3'-deoxythymidine. These building blocks were suitably **protected** at 5'-position and converted into phosphoramidites, or attached onto CPG, and then used for the '**chimeric oligonucleotide**' synthesis. The novel oligonucleotides derived therefrom have been studied for their binding properties to complementary nucleic acids and for their **nuclease** sensitivity. Oligonucleotides containing one, two, or three carbamate linkages at 3'-end, were found to have increased **nuclease** resistance and did not effect the duplex stability significantly.

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---Logging off of STN---

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Executing the logoff script...

=> LOG Y

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

FULL ESTIMATED COST

ENTRY

SESSION

75.79

75.94

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

TOTAL

CA SUBSCRIBER PRICE

ENTRY

SESSION

-2.94

-2.94

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